AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) Method of providing a radio frequency output signal, comprising the steps of:

determining an instantaneous size measure of an input signal, said size measure being an amplitude or therefrom derivable quantity;

deriving a drive signal from said input signal;

providing a bias signal, being dependent on said instantaneous size measure; and amplifying said drive signal using a bias level according to said bias signal into said radio frequency output signal;

whereby said bias signal dependency on said instantaneous size measure gives rise to an increased nonlinearity in said amplifying step.

- 2. (Previously Presented) Method according to claim 1, whereby said bias signal gives an amplification according to one of class C and class B for instantaneous size measures within a first amplitude range, and said bias signal being higher than class B amplification for instantaneous size measures above said first amplitude range.
- 3. (Previously Presented) Method according to claim 2, whereby said bias signal is controlled to give essentially a class A bias level at maximum amplitude.

- 4. (Previously Presented) Method according to claim 1, whereby said bias signal providing step is controlled for producing a predetermined output characteristics, whereby a bias signal amplitude-averaged over an amplitude interval comprising all amplitudes in an entire amplitude range supported by said amplifying step above a first amplitude is higher than a bias signal amplitude-averaged over said entire amplitude range.
- 5. (*Previously Presented*) Method according to claim 1, wherein said deriving step comprises the step of modifying said input signal.
- 6. (*Previously Presented*) Method according to claim 5, wherein said deriving step comprises the step of pre-distorting said input signal dependent on said instantaneous size measure.
- 7. (*Previously Presented*) Method according to claim 5, wherein said deriving step comprises the step of modifying said input signal by a feedback arrangement.
- 8. (*Previously Presented*) Method according to claim 1, wherein said bias signal is controlled to, for all amplitudes within a first amplitude range, increase with increasing amplitude.
- 9. (*Previously Presented*) Method according to claim 1, wherein said bias signal is controlled to be, for all amplitudes within a second amplitude range, lower than said bias signal amplitude-averaged over said entire amplitude range.

- 10. (Previously Presented) Method according to claim 8, wherein said first amplitude range comprises maximum amplitude.
 - 11. (Previously Presented) Method according to claim 6, comprising the further steps of: selecting a pre-distortion function having a predetermined bandwidth; and adapting bias signal according to said pre-distortion function.
- 12. (Previously Presented) Method according to claims 11, wherein said pre-distortion function contains predominantly low-order components.
 - 13. *Previously Presented*) Method according to claim 6, comprising the further steps of: selecting said bias signal according to predetermined relations; and adapting said pre-distortion function according to said bias signal.
- 14. (Previously Presented) Method according to claim 1, wherein said output characteristics, at least for a third amplitude range, is linear.
- 15. (*Previously Presented*) Method according to claim 14, wherein said output characteristics is substantially linear over the entire amplitude range.
- 16. (Previously Presented) Method according to claim 1, wherein said output characteristics comprises a substantially zero output signal within a fourth amplitude range.

17. (Previously Presented) Method according to claim 1, comprising the further steps of: determining a feedback signal of said radio frequency output signal; and adapting said drive signal and/or said bias signal according to said feedback signal.

18. (Previously Presented) Method according to claim 6, comprising the further step of: causing said pre-distorting and bias signal providing steps to be simultaneous at the input of said amplification.

19. (Previously Presented) Method according to claim 18, wherein said causing step in turn comprises at least one of the steps of:

inverse filtering of said drive signal with respect to a first signal path to an amplifying element;

delay compensation of said drive signal with respect to said first signal path to an amplifying element;

inverse filtering of said bias signal with respect to a second signal path to said amplifying element; and

delay compensation of said bias signal with respect to said second signal path to said amplifying element.

20. (Previously Presented) Method according to claim 1, comprising the further step of: compensating current saturation at high amplitude end.

21. (Previously Presented) Use of a method according to claim 1 in a radio frequency amplifier arrangement of a type selected from the list of:

Doherty amplifier arrangement;

Chireix amplifier arrangement; and

amplifier arrangements using envelope and restoration enhancement techniques.

22. (Previously Presented) Radio frequency power amplifier, comprising: input signal terminal;

input detector arranged to determine an instantaneous size measure of a signal on said input signal terminal, said size measure being an amplitude or therefrom derivable quantity;

drive signal deriving means connected to said input signal terminal, providing a drive signal;

bias signal generator providing a bias signal, said bias signal generator being connected to said input detector and being controlled dependent on said instantaneous size measure; and amplifying element, connected to said drive signal deriving means and said bias signal generator;

whereby said bias signal generator being controlled to gives rise to an increased nonlinearity in said amplifying element.

23. (Previously Presented) Radio frequency power amplifier according to claim 22, wherein said bias signal generator is arranged to give an amplification in said amplifying element according to one of class C and class B for instantaneous size measures within a first amplitude

range, and to give a bias signal being higher than class B amplification for instantaneous size

measures above said first amplitude range.

24. (Previously Presented) Radio frequency power amplifier according to claim 22,

wherein said bias signal generator is arranged to give a bias signal amplitude-averaged over an

amplitude interval comprising all amplitudes in an entire amplitude range supported by said

amplifying element above a first amplitude is higher than a bias signal amplitude-averaged over

said entire amplitude range.

25. (Previously Presented) Radio frequency power amplifier according to claim 22,

wherein said drive signal deriving means comprises pre-distorting means connected to said input

detector, being controlled dependent on said instantaneous size measure.

26. (Previously Presented) Radio frequency power amplifier according to claim 22,

wherein said bias signal generator in turn comprises means giving a bias signal, which for all

amplitudes within a first amplitude range, increase with increasing amplitude.

27. (Previously Presented) Radio frequency power amplifier according to claim 22,

wherein said bias signal generator in turn comprises means giving a bias signal, which for all

amplitudes within a second amplitude range, is lower than an amplitude-averaged bias signal.

28. (Previously Presented) Radio frequency power amplifier according to claim 25,

further comprising:

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feed-back arrangement, in turn comprising a feedback sensor monitoring said output of said amplifier element and adaptation means connected said bias signal generator and said predistortion means for providing said bias signal generator and said pre-distortion means with a feedback signal;

said bias signal generator and said pre-distortion means being arranged to adapt their actions according to said feedback signal.

29. (Previously Presented) Radio frequency power amplifier according to claim 22, further comprising:

simultaneousness-causing means for causing said drive signal and bias signal to be simultaneous at in input of said amplifying element.

30. (Previously Presented) Radio frequency power amplifier according to claim 29, wherein said coincidence causing means in turn comprises at least one of:

inverse filter connected between said pre-distortion means and said amplifying element, for compensating for a first signal path to said amplifying element; and

inverse filter connected between said bias signal generator and said amplifying element, for compensating for a second signal path to said amplifying element.

31. (Previously Presented) Composite radio frequency power amplifier, comprising at least one radio frequency power amplifier according to claim 22 as a sub-amplifier.

32. (Previously Presented) Composite radio frequency power amplifier according to

claim 31, wherein said composite radio frequency power amplifier is selected from the list of:

Doherty amplifier arrangement;

Chireix amplifier arrangement; and

amplifier arrangements using envelope elimination and restoration techniques.

33. (Previously Presented) Transmitter, having a radio frequency power amplifier, said radio frequency power amplifier comprising:

input signal terminal;

input detector arranged to determine an instantaneous size measure of a signal on said input signal terminal, said size measure being an amplitude or therefrom derivable quantity;

drive signal deriving means connected to said input signal terminal, providing a drive signal;

bias signal generator providing a bias signal, said bias signal generator being connected to said input detector and being controlled dependent on said instantaneous size measure; and amplifying element, connected to said drive signal deriving means and said bias signal generator;

whereby said bias signal generator being controlled to gives rise to an increased nonlinearity in said amplifying element.

34. (Previously Presented) Transmitter according to claim 33, wherein said bias signal generator is arranged to give an amplification in said amplifying element according to one of class C and class B for instantaneous size measures within a first amplitude range, and to give a

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bias signal being higher than class B amplification for instantaneous size measures above said

first amplitude range.

35. (Previously Presented) Transmitter according to claim 33, wherein said bias signal

amplitude-averaged over an amplitude interval comprising all amplitudes in an entire amplitude

range supported by said amplifying element above a first amplitude is higher than a bias signal

amplitude-averaged over said entire amplitude range.

36. (Previously Presented) Transmitter according to claim 33, wherein said drive signal

deriving means comprises pre-distorting means connected to said input detector, being controlled

dependent on said instantaneous size measure.

37. (Previously Presented) Transmitter according to claim 33, wherein said bias signal

generator in turn comprises means giving a bias signal, which for all amplitudes within a first

amplitude range, increase with increasing amplitude.

38. (Previously Presented) Transmitter according to claim 33, wherein said bias signal

generator in turn comprises means giving a bias signal, which for all amplitudes within a second

amplitude range, is lower than an amplitude-averaged bias signal.

39. (Previously Presented) Transmitter according to claim 38, wherein said second

amplitude range covers at least half the amplitude distribution.

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40. (Previously Presented) Transmitter according to claim 38, wherein said pre-distortion means comprises means for making said drive signal larger than said input signal at least in said second amplitude range.

41. (Currently Amended) Wireless communication system, having a radio frequency power amplifier, said radio frequency power amplifier comprising:

input signal terminal;

input detector arranged to determine an instantaneous size measure of a signal on said input signal terminal, said size measure being an amplitude or therefrom derivable quantity;

drive signal deriving means connected to said input signal terminal, providing a drive signal;

bias signal generator providing a bias signal, said bias signal generator being connected to said input detector and being controlled dependent on said instantaneous size measure; and amplifying element, connected to said drive signal deriving means and said bias signal generator;

whereby said bias signal generator being controlled to gives rise to an increased nonlinearity in said amplifying element.

42. (Currently Amended) Base station of a wireless communication system, having a radio frequency power amplifier, said radio frequency power amplifier comprising: input signal terminal;

input detector arranged to determine an instantaneous size measure of a signal on said input signal terminal, said size measure being an amplitude or therefrom derivable quantity;

drive signal deriving means connected to said input signal terminal, providing a drive signal;

bias signal generator providing a bias signal, said bias signal generator being connected to said input detector and being controlled dependent on said instantaneous size measure; and amplifying element, connected to said drive signal deriving means and said bias signal generator;

whereby said bias signal generator being controlled to-gives rise to an increased nonlinearity in said amplifying element.

43. (Currently Amended) Mobile unit of a wireless communication system, having a radio frequency power amplifier, said radio frequency power amplifier comprising:

input signal terminal;

input detector arranged to determine an instantaneous size measure of a signal on said input signal terminal, said size measure being an amplitude or therefrom derivable quantity; drive signal deriving means connected to said input signal terminal, providing a drive signal;

bias signal generator providing a bias signal, said bias signal generator being connected to said input detector and being controlled dependent on said instantaneous size measure; and amplifying element, connected to said drive signal deriving means and said bias signal generator;

whereby said bias signal generator being controlled to gives rise to an increased nonlinearity in said amplifying element.